An Interdisciplinary Approach of Observing Quality of Life Indicators In an Urban Environment using Geographic Information Systems

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Abstract

New York City is an urban area which provides a multitude of services that support an adequate balance of "...biophysical, environmental and s ocial conditions..." (Papageorgia, 1976) contributing to quality of life for New Yorkers. A Geographic Information Systems (GIS) choropleth and descriptive analysis will be used to link geographic trends between job availability, efficient transport systems, pollution, housing quality (Pacione, 2003), and education as factors pertinent to quality of life in the area. Datasets will be derived from multiple open-source data platforms, where each dataset will represent a quality of life indicator. Potential findings will support the importance of using various spatial datasets together to gain a greater insight on the influential factors contributing to quality of life. Information derived from the study can be used to identify policy planning in various urban areas across the United States.

Inter-Faceted Data

Figure 1: Examining quality of life through population, unemployment rates, poverty and income levels

Study Area

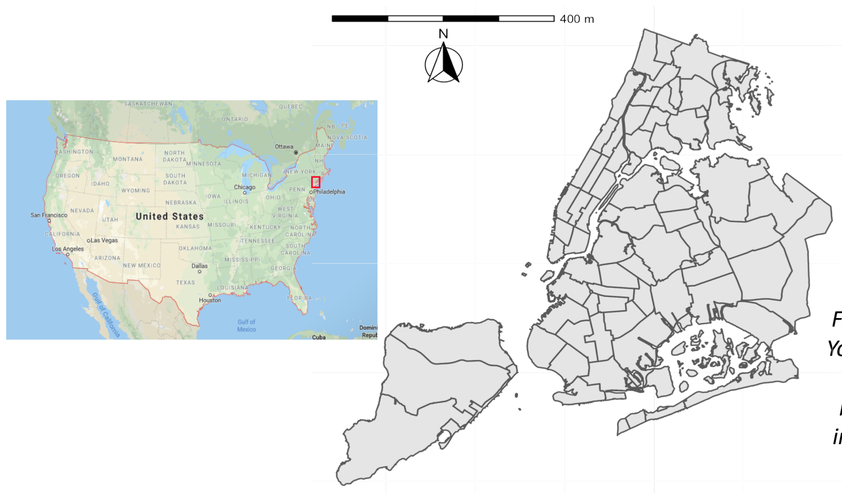
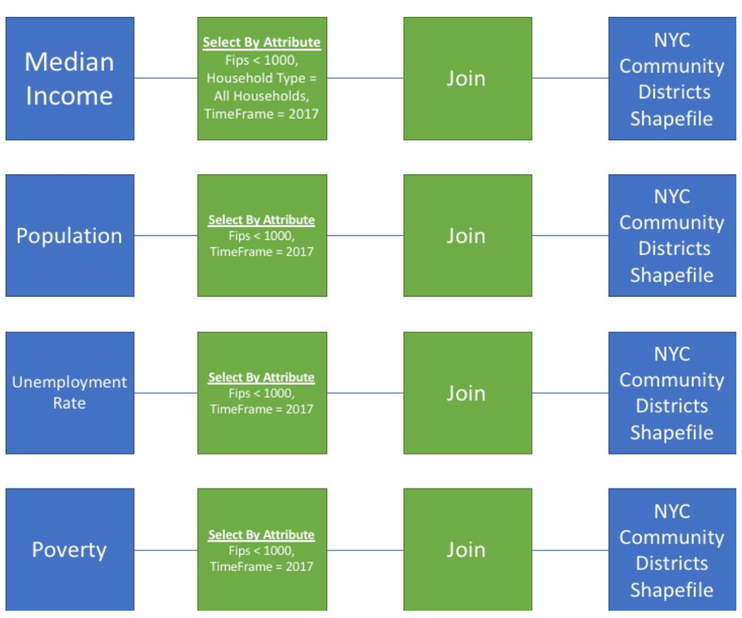


Figure 2: Focusing on New York City on the community district level, balance between granularity and information of census and boroughs

GIS Model



The Disparities

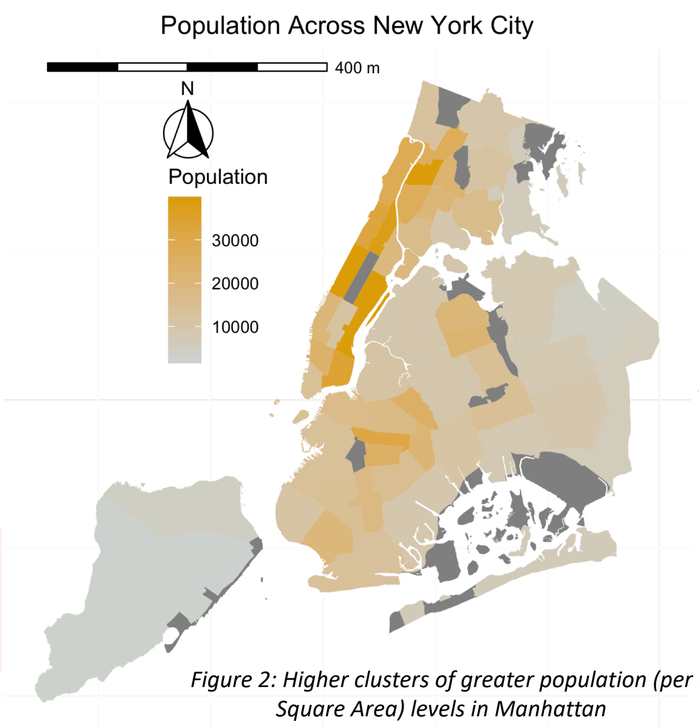


Figure 2: Higher clusters of greater population (per Square Area) levels in Manhattan

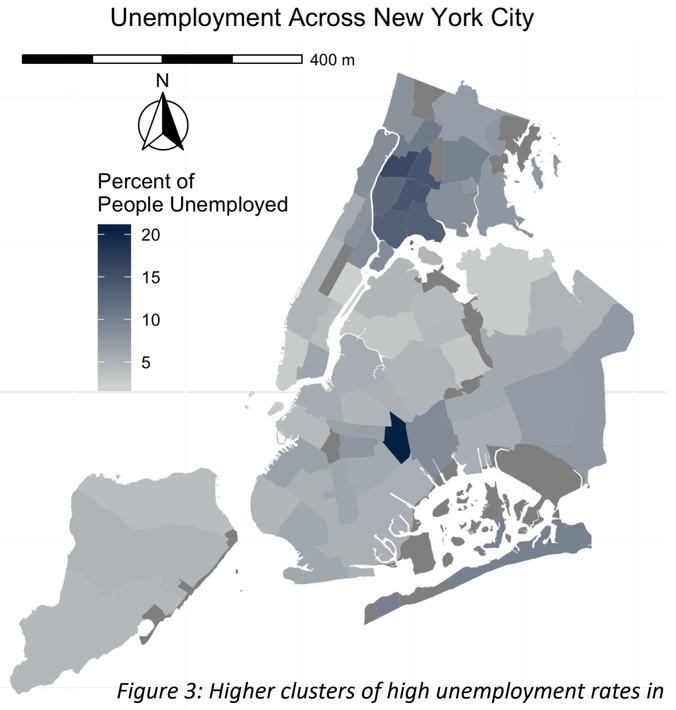


Figure 3: Higher clusters of high unemployment rates in lower Bronx

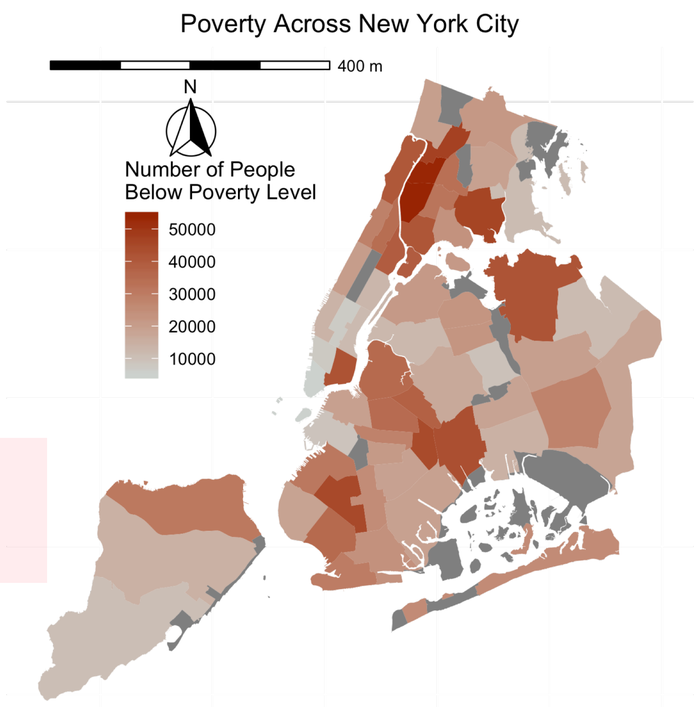


Figure 4: Poverty levels appear significantly higher in lower Bronx, low in lower Manhattan

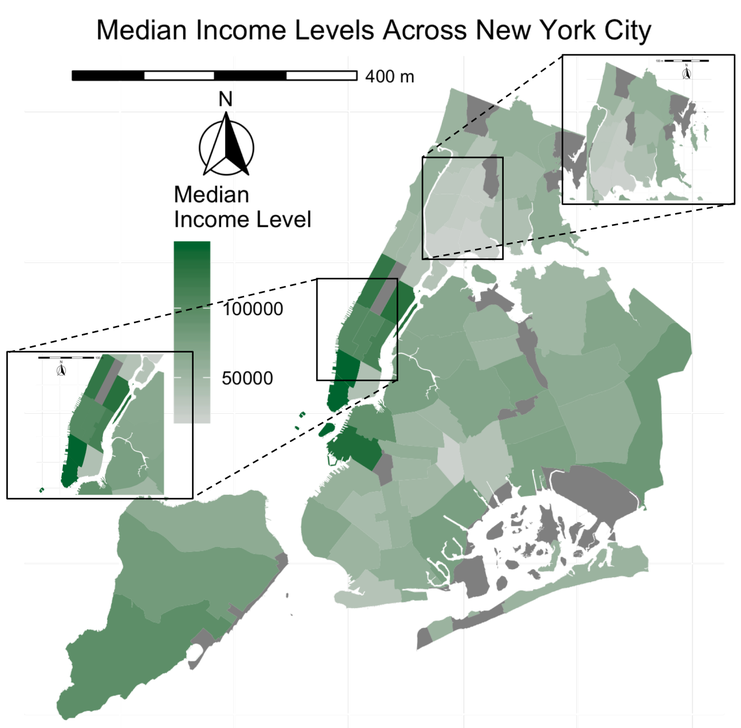


Figure 5: Poverty levels appear significantly higher in lower Bronx, low in lower Manhattan

Findings and Future Goals

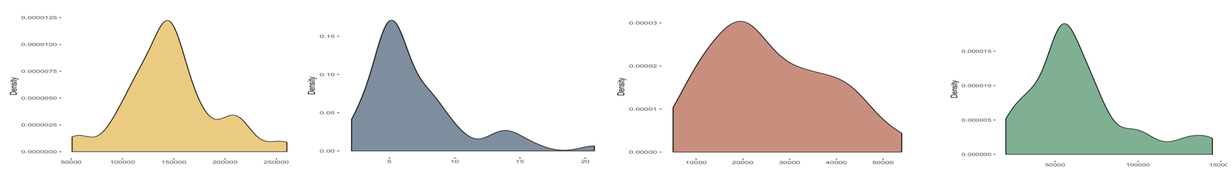


Figure 6: There is a clear indication of disparity across quality of life factors; population, unemployment, poverty, and median income levels (left to right

- Power in open sourced analysis, data and programming, of open sourced data for individuals who lack the resources to collect and analyze it, and still maintain a sense of participation. (Obermeyer, 1998)

Limitations

- Very little flexibility with analysis of aggregated values
- Small sample size to optimally support suggestable assumptions

Future Goals

- Predictive models on analysis to identify future needs within communities
- Explore analysis on a more granular level, potentially with the census tracts

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